

Summer Treatment Program for Preschoolers with Externalizing Behavior Problems: a Preliminary Examination of Parenting Outcomes

Paulo A. Graziano¹ · Rosmary Ros¹ · Katie C. Hart¹ · Janine Slavec²

Published online: 7 November 2017
© Springer Science+Business Media, LLC 2017

Abstract Within an at-risk sample of preschoolers with externalizing behavior problems (EBP), the current study examined the initial promise of a multimodal intervention, the Summer Treatment Program for Pre-Kindergarteners (STP-PreK), in improving parenting outcomes. Using an open trial design, 154 parents and their preschool children (73% male; $M_{\text{age}} = 5.06$ years; 82% Hispanic/Latino background) with at-risk or clinically elevated levels of EBP (57% of which were referred by schools or mental health/medical professionals) completed a baseline and post-treatment assessment. A subsample of 90 families completed a follow-up assessment approximately 6 to 9 months after treatment completion. Parental measures of parenting stress and discipline strategies were collected across all three assessments. Observational data were also collected across all assessments during a 5-min standardized child-led play situation and a 5-min parent-led clean up task. The parenting component of the STP-PreK included a School Readiness Parenting Program (SRPP) of which the behavioral management component was implemented via a Parent-Child Interaction Therapy (PCIT) adaptation (8 weekly group sessions with 15–20 parents in each group, lack of requirement of “mastery” criteria). All parenting outcomes (both ratings and observed) significantly improved after the intervention (Cohen’s d mean effect size across measures 0.89) with all effects being maintained at

the 6–9 month follow-up. These findings highlight the initial promise of our SRPP’s PCIT adaptation in targeting multiple aspects of parenting while yielding comparable parenting skills acquisition compared to traditional individual PCIT.

Keywords School readiness · Parent training · Externalizing behavior problems · Preschool · Intervention · PCIT

Children with externalizing behavior problems (EBP) such as Attention-Deficit/Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD) experience significant impairment across a host of functional domains (Nigg and Barkley 2014). A common result of these problems is that children with EBP are at heightened risk for poor school outcomes (Duncan et al. 2007; McClelland et al. 2007; Webster-Stratton et al. 2008). EBP in young children is especially important for predicting success in the early school years (Denham 2006). Thus, considerable work has aimed to improve school readiness outcomes for young children with EBP.

While there are various multimodal early intervention programs that promote children’s social-emotional functioning (see Domitrovich et al. 2013 for a review), most do not specifically target preschool children with EBP. Additionally, most interventions have not been designed to provide services during the summer transition to kindergarten. The Summer Treatment Program for Pre-Kindergarteners (STP-PreK) was recently developed to target such critical transition from preschool to kindergarten for children with EBP. While both an open trial and randomized trial of the STP-PreK have demonstrated efficacy in improving child outcomes across behavioral, academic, and self-regulation domains of school readiness (Graziano et al. 2014; Graziano and Hart 2016), its impact on parenting outcomes has not been examined. Examining the

✉ Paulo A. Graziano
pgrazian@fiu.edu

¹ Center for Children and Families & Department of Psychology, Florida International University, 11200 SW 8th Street, AHC 4 Rm. 459, Miami, FL 33199, USA

² Department of Psychology, University of Maine, 168 College Ave, Orono, ME 04469, USA

effects of a multimodal early intervention program on parenting may be especially important as parenting factors are critical in promoting children's early school success (Gray and Steinberg 1999; Hoover-Dempsey et al. 2005). Thus, the focus of the current study was on the parenting outcomes of families who participated in the STP-PreK.

Parenting and EBP

Fostering positive parenting practices and involvement prior to school entry may be particularly important for children with EBP given that parents of children with EBP are often less involved (Wagner et al. 2005; Rogers et al. 2009) and feel less confident in their ability to manage their children's behaviors (Jones and Prinz 2005; Weaver et al. 2008). Additionally, parents of children with ADHD, for example, experience more dysfunctional parent-child interactions (Gerdes et al. 2003; Johnston 1996; Johnston and Mash 2001) and are more likely to engage in negative parenting practices (Johnston and Mash 2001; Deault 2010). Parents of children with ADHD also report higher levels of parenting stress compared to parents of children without ADHD (Breen and Barkley 1988; Johnson and Reader 2002; Mash and Johnston 1983). In fact, parental stress is thought to be one key factor responsible for parents of children with ADHD engaging in maladaptive parenting practices (Belsky et al. 1996; Deater-Deckard and Scarr 1996). It is important to acknowledge, however, that the link between parenting stress and maladaptive parenting practices is complex and influenced in a bi-directional manner by children's own behavioral and social functioning (Neece et al. 2012; Crnic and Low 2002; Pardini et al. 2008).

Parenting and School Readiness

In addition to the critical role that parenting plays for children with EBP, parenting factors are also considerably important for school readiness outcomes. Specifically, parental involvement, which includes parents' interactions in children's learning (e.g., shared book reading) and school-to-home communications (e.g., teacher-parent conferences; Epstein 1987; Grolnick and Slowiaczek 1994), have been shown to be an important predictor of both social and academic school success (Epstein 2001; Hill and Craft 2003; McWayne et al. 2004). Additionally, positive parent-child interactions that are stimulating/responsive have been shown to promote children's early acquisition of academic skills (Committee on Early Childhood Pedagogy 2000) and their initial and long-term academic success (Gregory and Rimm-Kaufman 2008; Morrison et al. 2003; NICHD 2002). Finally, parenting disciplinary practices that obtain a balance between warmth and control (i.e., authoritative parenting) are also strong predictors

of both academic and social outcomes in the early school period (Kordi and Baharudin 2010). Given the role that parenting may play on school readiness outcomes, it is imperative to examine parenting outcomes for interventions targeting populations at high risk for early school problems (e.g., preschoolers with EBP).

Behavioral Parent Training (PT)

Behavioral parent training (PT) programs such as the Triple P-Positive Parenting Program (Sanders et al. 2000), Incredible Years (Webster-Stratton and Reid 2010), Helping the Noncompliant Child (McMahon and Forehand 2003), and Parent-Child Interaction Therapy (PCIT; Zisser and Eyberg 2010) are among the most well-established treatments for young children with EBP as they are very effective in improving children's behavioral outcomes (Eyberg et al. 2008; Pelham and Fabiano 2008). As it relates to the current study's focus on parenting, these behavioral PT programs have also been shown to be effective in targetting multiple aspects of parenting including fostering more positive parent-child interactions (Eyberg et al. 2008), improving parental self-efficacy (Clarke et al. 2015), reducing parenting stress (Schuhmann et al. 1998; Thomas and Zimmer-Gembeck 2011), and improving parental discipline practices (Thomas and Zimmer-Gembeck 2007). These PT programs often last three to four months (Reyno and McGrath 2006), with some programs such as PCIT not ending until parents reach "mastery criteria," making them considerably longer for some families (Reyno and McGrath 2006).

An indirect problem associated with longer PT programs, such as PCIT (which averages 12 to 14 sessions), is that it can lead to poor attendance and higher attrition. For example, Werba et al. (2006) found that 38% of families receiving traditional PCIT dropped out of treatment. In terms of attendance, families who dropped out of treatment completed an average of about 7 sessions compared to 14 sessions by families who completed PCIT. Attrition rates are even worse in a more recent study that evaluated PCIT conducted with a more diverse sample both in-home and in a standard community office-based. Specifically, Lanier et al. (2011) found that 69% of families failed to complete treatment with an average attendance rate of 6.7 sessions prior to drop-out compared to 17 sessions by families who completed PCIT. More recently using a time limited 12-week PCIT protocol, Webb et al. (2017) examined whether adding a 3 session motivational enhancement component would reduce attrition and improve outcomes. Unfortunately, attrition rates (and outcomes) were comparable among families who received standard PCIT (31%) and motivation-enhanced PCIT (42%) with families who dropped out attending only 3.9 sessions. Taken together,

it is clear that condensing PCIT to a shorter duration may be one way to ameliorate some of these unfortunate attrition rates. A consequence of shortening PCIT may be that families will complete treatment without necessarily achieving “mastery” criteria although we are not aware of any study that has empirically determined the optimal number of skills that parents must demonstrate prior to treatment completion. Thus, determining whether a shorter PCIT protocol can yield positive parenting outcomes in the absence of reaching the “mastery” criteria is also an important research question given its clinical implications.

Another obstacle preventing the dissemination of PCIT to community settings is the cost associated with providing PCIT to individual families. Notwithstanding the initial cost of setting up equipment (e.g., bug in the ear, cameras) and the infrastructure (e.g., one-way mirror, training) to deliver PCIT (\$5000–10,000), a cost-effectiveness analysis estimated that the average cost of providing individual PCIT is approximately \$1000 per client (Goldfine et al. 2008). Not surprisingly, other studies have documented the cost-savings of providing group PT compared to individual PT. Indeed, Cunningham et al. (1995) showed that large group community based parenting programs were six times as cost effective as individual services. Within the PCIT literature, several studies have documented the initial feasibility of conducting PCIT with small groups of 3–5 parents (Niec et al. 2006; Nieter et al. 2013). However, the extent to which PCIT can be adapted to be delivered within a larger group format remains unknown. Adapting PCIT to be delivered in a larger group setting may not only have a tremendous cost-savings impact but may also have an added advantage in its use of parent-to-parent models. Parents observing and learning from each other may promote parenting self-efficacy which is generally related to more positive parenting behaviors (Coleman and Karraker 2000; Sanders and Woolley 2005).

The Current Study

Given the aforementioned limitations of previous PCIT programs, the goal of the current study was to examine, within the context of a multimodal summer intervention (STP-PreK), the extent to which PCIT can be adapted to be implemented in a shorter duration, with larger groups, and achieve positive parenting outcomes in the absence of requiring parents to achieve “mastery” criteria. An integral part of the STP-PreK, the School Readiness Parenting Program (SRPP), is a time limited (i.e., 8 weekly sessions) PT program. A unique aspect of the SRPP, is that the behavioral management portion of the sessions are delivered via a group PCIT framework (Zisser and Eyberg 2010). The current study is the first to our knowledge to adapt PCIT to be used with a large group (15–20 parents) and within only 8 sessions. Specifically, we conducted 4

sessions based on the first phase of PCIT (child directed interaction) and 4 sessions based on the second phase of PCIT (parent directed interaction) with parents moving to the second phase of treatment without requiring them to reach “mastery” criteria. More details are provided in the method section on the implementation of brief coaching and the involvement of all parents during sessions. While the STP-PreK has been shown to improve children’s school readiness across a host of school readiness domains (e.g., behavior, academics, self-regulation), parenting outcomes have not been examined. We hypothesized that parents who participated in the STP-PreK would a) reduce their levels of parenting stress, b) improve their discipline strategies, c) increase their school involvement, and d) improve their parent-child interactions. We also hypothesized that children’s observed compliance in the context of parent-child interactions would significantly improve.

Finally, we wanted to assess the extent to which our SRPP’s PCIT adaptation (large group, 8-session, lack of requirement of “mastery” criteria) approach yields comparable parenting skills acquisition compared to traditional individual PCIT. To examine this goal, we compared our study’s post-treatment and follow-up effect sizes to those reported by Thomas and Zimmer-Gembeck (2007)’s meta-analysis on PCIT. Specifically, given our open trial design, we used the single group pre to post-treatment effect sizes (6 studies) and pre to follow-up effect sizes (3 studies). The sample composition of these comparison studies is similar to that of the current study in that children were on average 4.5 years old and predominantly boys (82%; Thomas and Zimmer-Gembeck 2007). The only notable difference is that the current study took place in a predominantly Hispanic/Latino population while past PCIT studies were conducted with families who were predominantly non-Hispanic/Latino White. Lastly, the follow-up period of the comparison studies ranged from 4 months to 12 months which is also comparable to our study’s 6–9 month follow-up assessment. We hypothesized that our PCIT adaptation would yield comparable effect sizes across parenting outcomes compared to those of traditional PCIT studies.

Method

Participants and Recruitment

The study was conducted at a large urban university in the Southeastern United States with a large Hispanic/Latino population. Families were recruited from local preschools and mental health agencies through brochures, radio ads, and open houses/parent workshops to participate in an intensive summer treatment program. Eligibility to participate was determined by (a) an externalizing behavior problems t-score of 60 or higher on the parent or teacher BASC-2 (Reynolds

and Kamphaus 2004), (b) enrollment in preschool the previous school-year, (c) an IQ of 70 or higher on the Wechsler Preschool and Primary Scale of Intelligence-3rd or 4th edition (WPPSI-III; Wechsler 2002; WPPSI-IV; Wechsler 2012), no history of a primary diagnosis of Autism or Psychotic Disorder, and ability to attend an 8-week summer treatment program. Sixty-four families were screened out due to not meeting the above criteria.

The final sample consisted of 154 preschoolers ($M_{\text{age}} = 5.06$, & 73% male) whose parents provided informed consent to participate in the research study and took part in the intervention. Questionnaires, offered in the parents' preferred language, were completed primarily by mothers (96%) across all study assessments. Fifty seven percent of children were referred by school or mental health/medical professionals. See Table 1 for sample demographics including rates of diagnoses derived from a combination of parent structured interview (Computerized-Diagnostic Interview Schedule for Children; Shaffer et al. 2000) and parent and teacher ratings of symptoms and impairment (Disruptive Behavior Disorders Rating Scale [Pelham et al. 1992] and Impairment Rating Scale [Fabiano et al. 2006]), as is recommended practice (Pelham, Fabiano and Massetti 2005). According to parent report at intake, only three children were on any psychotropic medication. The children's dose were maintained throughout the treatment and our results were the same with and without the inclusion of these three children. Additionally, 4 families failed to initiate treatment as they did not attend a single parenting session. Thus, the final sample for subsequent analyses was 150.

Study Design and Procedure

This study was approved by Florida International University's Institutional Review Board. All families participated in a pre-treatment assessment scheduled prior to the start of the STP-PreK and all but four families completed a post-treatment assessment scheduled 1 to 2 weeks after the intervention ended. A subsample of 90 families completed a follow-up assessment approximately 6 to 9 months after the intervention ended. This subsample was randomly selected as we did not have sufficient funding to conduct follow-up assessments with all families. There were no significant differences in demographic (e.g., child sex) or study variables (parenting outcomes) in terms of families who completed the follow-up assessment compared to those that did not. However, families that completed the follow-up assessment tended to have higher SES backgrounds ($M = 44.53$, $SD = 12.35$) than families that did not complete the follow-up assessment, $M = 40.17$, $SD = 12.83$, $t(148) = -2.09$, $p < 0.05$). Thus, all analyses controlled for family SES. The follow-up sample ($n = 90$) represents 61% of the larger sample. Although smaller, the statistical power to find a meaningful effect for the follow-

Table 1 Participant baseline demographic variables

| | Total Sample ($n = 154$) |
|------------------------------------|---|
| Demographic Variables | |
| Child sex (% male) | 73 |
| Child age (Mean) | 5.06 (0.54) |
| Hollingshead SES (Mean; SD; Range) | 42.46 ($SD = 12.87$; range = 12 to 66) |
| Child Race (%) | |
| Hispanic/Latino | 82 |
| Non-Hispanic/Latino White | 11 |
| African-American | 5 |
| Other | 2 |
| Caregiver age (Mean) | 36.70 (7.27) |
| Household structure (%) | |
| Both biological parents present | 61 |
| Single biological parent | 39 |
| Screening Measures | |
| Child IQ | 90.52 (13.69) |
| BASC-2 Externalizing t-score (P) | 65.19 (12.44) |
| BASC-2 Externalizing t-score (T) | 66.45 (13.41) |
| ADHD + ODD diagnosis (%) | 48 |
| ADHD only diagnosis (%) | 29 |
| ODD only diagnosis (%) | 11 |

Values enclosed in parentheses represent standard deviations. *SES*, socioeconomic status; *BASC-2*, Behavior assessment system for children, 2nd Edition, *ADHD*, Attention-deficit hyperactivity disorder; *ODD*, Oppositional defiant disorder; *P*, parent report; *T*, teacher report

up sample was still adequate (0.81). Of note, on average children attended 93% of camp days and families who were included in the follow-up analyses ($M = 0.94$, $SD = 0.06$) did not significantly differ from families who did not participate in the follow-up analyses in percentage of camp days attended, $M = 0.92$, $SD = 0.10$, $t(148) = -1.71$, $p = 0.09$. As part of their compensation, all families received the intervention at a subsidized cost via a local or federal grant. There was no additional cost for families to come to the SRCPP (i.e., large group PCIT). At all three assessments, mothers were asked to complete questionnaires about their parenting practices, involvement in their child's school, parenting stress, and their child's behavior. A standardized observation was also conducted to measure parent-child interactions during child-led play and a parent-led clean up task. The feasibility and initial efficacy of the STP-PreK in improving children's EBP (as reported by parents and teachers) and school readiness outcomes (e.g., academic achievement, self-regulation measures), are reported elsewhere (Graziano et al. 2014 & Graziano and Hart 2016). For the purposes of this study, we examined the initial efficacy of the STP-PreK in improving parenting outcomes as well as the initial feasibility and

acceptability of the behavioral management component of the SRPP (i.e., large group PCIT).

Intervention Description

Families participated in the STP-PreK for 8 weeks during the summer months preceding the start of Kindergarten. The STP-PreK is a multimodal intervention including a kindergarten readiness classroom, which consisted of a behavior modification program as well as an academic and socio-emotional curriculum (see Graziano et al. 2014). Given the current study's focus on parenting outcomes, the description of the parenting component, the SRPP, is discussed in further detail below.

Parents attended a School Readiness Parenting Program (SRPP) that was conducted weekly lasting between 1.5 to 2 hours. Parents were invited to attend one of two weekly evening sessions (same content was delivered on both evenings) with about 15–20 parents in each group led by two therapists. Sessions were delivered in English or Spanish by advanced clinical psychology graduate students who were trained in individual PCIT and were then subsequently trained in group parent training. Therapists received weekly supervision by a licensed clinical psychologist. Additionally, dinner and child care were provided during all sessions. The number of miles families traveled to the program ranged from 2 miles to 35 miles, with 80% of families living within a 10 mile radius of the program.

The first half of each session of the SRPP focused on traditional behavior management strategies (e.g., improving the parent-child relationship, use of reinforcement, time-out) implemented within a group PCIT framework (Zisser and Eyberg 2010). Parents contributed to the didactic discussion via a Community Parent Education Program (COPE; Cunningham 1998) style of problem solving, which involves allowing families to actively contribute and guide the group discussion. The COPE style of problem solving encourages families to provide suggestions and solutions to one another rather than relying on strictly didactic information provided by the therapist. The behavioral management content was based on PCIT with four sessions (one teach and 3 coach sessions) focused on child-directed interaction (CDI) skills (e.g., improving “do skills” of labeled praise, description, reflection, and enthusiasm, while reducing “don’t skills” of criticisms, commands, and questions) during “special time,” while another four sessions (one teach and 3 coach sessions) focused on parent-direct interaction (PDI) skills (e.g., effective commands, time out).

Following the didactic discussion, subgroup activities entailed parents practicing the newly acquired skills with their own children for 10–15 min. During this practice time, other parents in the subgroup observed (and guided by a coding sheet tallied, for example, the number of “do” and “don’t” skills observed) while two therapists rotated among the subgroups to provide direct “coaching” to each parent. Upon completion of the practice period, parents in the subgroup

provided positive feedback to the parent who was practicing his/her skills. Two more rotations would follow to allow more parents to practice their skills with their own children. Upon completion of the 45 min practice period, the entire group would reconvene to discuss their progress, problem solve any issues that came up in the session, as well as discuss the potential benefits of continuing to practice their skills at home. It is important to note that all parents were “coached” by a therapist once during the child directed phase and once during the parent directed phase. Thus, our large group PCIT model differs from traditional individual or small group PCIT in not only its ability to serve a larger group of parents but also that it a) is time limited (8 sessions), b) does not require parents to achieve a “master criteria” during the child directed interaction phase prior to moving towards the parent directed phase, c) involves only being briefly coached twice during the entire treatment compared to being coached extensively every session, and d) takes advantage of observing other parents practicing with their children.

During the second half of each SRPP session, parents participated in group discussions on several school readiness topics including: how to appropriately manage behavior problems during homework time and in public settings, how to promote children's social-emotional functioning, how to promote early literacy and math skills, dialogic reading, how to implement a home-school communication plan with teachers (i.e., daily report card), and how to prepare their child for kindergarten. While these topics were covered within large group discussions, parents did get a chance to role play with each other for certain topics. For example, after the therapists introduced and modeled dialogic reading strategies to target children's early literacy skills, parents broke into subgroups and practiced dialogic reading with each other using age appropriate books provided by our program. Parents who could not afford or did not have access to age appropriate books conducive to dialogic reading were able to check out a book from our library.

Measures of Feasibility and Acceptability

Treatment Fidelity SRPP fidelity was completed by a licensed psychologist or master's level graduate student for 6 of 8 sessions, with weekly group supervision provided by a licensed psychologist. Treatment integrity coding involved assessing for the frequency, duration, and inclusion of all session content for each session. For instance, coders assessed whether therapists followed the treatment manual's session procedures (e.g., providing session overview, collecting and assigning homework, coaching parent practice with children, reviewing parent practice) as well as content topics (e.g., reward systems, positive parenting strategies, timeout system, sleep routines). In addition, coders rated therapists on a 1- to 7-point scale (1 = *superior*, 7 = *inadequate*) in terms of how

effective they were in engaging parents during the session and providing social reinforcement and support to parents.

Attendance Session attendance was measured from sign-in sheets completed by parents.

Treatment Satisfaction Upon completion of treatment, parents provided ratings of treatment satisfaction for the SRPP by completing an adapted version of the Therapy Attitude Inventory (TAI; Brestan et al. 1999). The TAI is a 10-item parent-report measure that assesses parent satisfaction with treatment. The TAI demonstrates excellent internal consistency among items ($\alpha = 0.91$) while the test-retest reliability for a summed total score over a four month period was also high (0.85). External validity of the TAI has also been shown via moderate correlations (0.36 to 0.49) between the summed total score and both parent-rating scales and observational measures of treatment (Brestan et al. 1999). For the purposes of the current study, the overall satisfaction item was analyzed. Additionally, items assessing parent satisfaction with learning discipline strategies, improvements in parent-child relationship quality, and improvements in parental confidence were examined separately.

Parenting Measures

Parenting Stress Parents completed the Parenting Stress Index/Short Form (PSI; Abidin 1995) to assess the source and degree of parenting stress. The PSI contains 36 items rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale and yields subscales assessing parental distress, stress related to parent-child interactions, stress related to the child's behavior, and a total score. This measure demonstrates good test-retest reliability (0.68–0.85), internal consistency (0.85–0.91) and concurrent validity (Abidin 1995). For the purpose of the present study, the total stress raw score ($\alpha = 0.84$ –0.90) was used as our measure of parenting stress where higher scores indicate increased parenting stress.

Parenting Practices and Parental Involvement The Alabama Parenting Questionnaire-Preschool Version (APQ-PR; Shelton et al. 1996) consists of 42 items that are designed to measure: parental involvement, positive parenting, monitoring and supervision, inconsistent discipline, and corporal punishment. Item ratings are made on a 5-point Likert scale. The APQ has been found to have good internal consistency across the positive parenting ($\alpha = 0.80$) and involvement ($\alpha = 0.80$) scales, good criterion validity in differentiating clinical and nonclinical groups (Frick et al. 1999; Shelton et al. 1996), and has been used with parents of young children (Clerkin et al. 2007). To reduce the number of analyses and consistent with prior research (Essau et al. 2006), the current study examined a positive parenting practices/parental

involvement composite (α 's = 0.77–0.80; involvement and positive parenting). Additionally, given research showing that the corporal punishment and poor monitoring/supervision subscales of the APQ show weak reliability and internal consistency and may not be suitable for preschoolers (Clerkin et al. 2007; Dadds et al. 2003) the current study only focused on the inconsistent discipline subscale (α 's = 0.66–0.70).

Parent-Child Interactions The Dyadic Parent-Child Coding System—Third Edition (DPICS-III; Eyberg et al. 2005) is a widely used behavioral coding system that measures the quality of parent-child social interactions. It provides an observational measure of parent and child behaviors during three 5-min standard situations that vary in the degree of parental control required (i.e., child led play, parent-led play, & clean-up). Commonly used parent codes include use of behavior descriptions (statements describing the child's actions); reflections (statements with the same meaning as a preceding child verbalization); praises (statements expressing positive evaluation of the child); criticisms (statements expressing disapproval to the child); questions; and commands. Consistent with previous PCIT research (Bagner et al. 2013; Graziano et al. 2015; Matos et al. 2006) in measuring changes in parent-child interactions, we created two composite categories of “Do Skills” (behavior descriptions, reflections, & praises) and “Don't Skills” (questions, commands, & criticisms) reflecting behaviors parents are taught to use/not to use during child-led play. Child responses to parent commands (% of compliance) was also measured during the clean-up task. Coders, who were blind to child diagnosis and observation time point, were trained to 80% on criterion tapes. Twenty-two percent of observations were coded a second time for reliability. Reliability for the *do* and *don't skills* as well as rates of compliance were excellent (r 's range from 0.82 to 0.98).

Data Analysis Plan

Descriptive data were provided to establish the feasibility and acceptability of the parenting component of the STP-PreK (i.e., SRPP). To examine the preliminary efficacy of the STP-PreK and given the open trial nature of this study, we conducted multiple repeated measures ANOVAs. Although we did not have a between-subjects factor, within-subjects follow-up contrast tests, with a Bonferroni correction to minimize type 1 error, were conducted to examine any changes from pre- to post-treatment and to the follow-up assessment. Cohen's d effect size estimates ($[\text{pre-treatment} - \text{post-treatment}/\text{follow-up assessment}]/\text{pooled SD}$) were provided for all treatment and follow-up analyses. A power analysis (Gpower) revealed that with a sample size of 154 we had adequate power (0.95) to detect a meaningful effect (Cohen's d of 0.3). With Bonferroni corrections, power still remained within the acceptable range (0.91). Multiple

imputation with 10 iterations was used to handle missing data (Rubin 1987), which was missing at random, on the 60 families that did not participate in the follow-up assessment. Analyses were re-run with and without multiple imputation and no meaningful differences in the pattern of results emerged, thus for a larger N we chose to report analyses with the use of multiple imputation.

Results

Preliminary Analyses

Descriptive Statistics Analysis of demographic variables revealed a significant association between SES and post-treatment “do skills” ($r = 0.23, p < 0.05$) and “don’t skills” ($r = -0.24, p < 0.01$) indicating that parents from higher SES backgrounds were more likely to display more “do skills” and fewer “don’t skills” at post-treatment. Child sex was also associated with initial levels of parenting stress ($r = -0.19, p < 0.05$) such that parents of girls reported lower levels of stress compared to parents of boys. Preliminary analyses did not yield any other significant associations between demographic variables and parenting outcomes. Subsequently, child sex and SES were controlled in all analyses.

Feasibility and Acceptability

Treatment Fidelity Average treatment fidelity ranged from 90% to 100% per session ($M = 98%$) indicating that the therapists implemented the SRPP with very strong fidelity. The therapists were also highly rated in how effective they were in engaging parents during the session ($M = 1.20$) and providing social reinforcement and support to parents ($M = 1.20$).

Attendance Parents attended, on average, 86% of the number of parent training sessions (6.9 out of 8 sessions). Specifically, 66 parents attended all 8 sessions, 38 parents attended 7 sessions, 23 parents attended 6 sessions, 10 parents attended 5 sessions, 9 parents attended 4 sessions, 2 parents attended 3 sessions, 1 parent attended 2 sessions, and 1 parent attended 1 session. As indicated earlier, 4 families failed to attend a single session and were excluded from all analyses.

Satisfaction As measured on the TAI, parents reported high overall treatment satisfaction (M rating of 4.83 out of 5) as well as high satisfaction in terms of having learned discipline strategies (M rating of 4.66 out of 5), improved relationship with their child (M rating of 4.5 out of 5), and improved confidence in disciplining their child (M rating of 4.7 out of 5).

Preliminary Efficacy

Parenting Stress As seen in Table 2, significant changes were observed in parenting stress across time, $F(1, 147) = 96.04, p < 0.001$, after controlling for child sex and SES. Specifically, parents reported a significant decrease in their overall stress from pre to post-treatment, $d = -0.78, p < 0.001$, with such improvements being significantly maintained during the follow-up assessment, $d = -0.59, p < 0.001$. No significant changes were noted from post-treatment to follow-up, $d = 0.11, p = 0.59$.

Parenting Practices and Parental Involvement As seen in Fig. 1, significant changes were observed in both positive parenting/involvement and inconsistent discipline even after controlling for children’s sex and SES, $F(1, 147) = 12.64, p < 0.001$ and $F(1, 147) = 10.89, p < 0.001$, respectively. Specifically, parents increased their use of positive discipline strategies and involvement while also decreasing their use of inconsistent discipline strategies from pre-treatment to post-treatment, $d = 0.22, p < 0.001$ and $d = -0.42, p < 0.001$, respectively. Such improvements within the positive parenting/involvement domain of the APQ were significantly maintained (with an actual increase) during the follow-up assessment, $d = 0.57, p < 0.001$. Similarly, the improvement within the inconsistent discipline domain maintained during the follow-up assessment, $d = -0.25, p < 0.01$.

Parent-Child Interactions As seen in Fig. 2, significant changes were observed in parents’ observed use of “do” and “don’t” skills after controlling for child sex and SES, $F(1147) = 32.24, p < 0.001$ and $F(1147) = 27.21, p < 0.001$, respectively. Specifically, parents improved their use of “do skills” and reduced their use of “don’t” skills during the child-led observation from pre to post-treatment, $d = 1.40, p < 0.001$ and $d = -1.37, p < 0.001$, respectively. Such improvements in “do” and “don’t” skills were significantly maintained during the follow-up assessment, $d = 0.62, p < 0.01$ and $d = -1.07, p < 0.001$, respectively. Of note, there was a significant decrease in “do” skills from the post-treatment to follow-up assessment, $d = -0.31, p < 0.01$, but not for the “don’t” skills, $d = 0.19, p = 1.00$.

Child Compliance Children significantly increased their compliance to parental commands during the clean-up task even after controlling for child sex and SES, $F(1147) = 4.50, p < 0.05$. Specifically, children increased in their compliance from pre to post-treatment, $d = 0.35, p < 0.01$. Such improvement was also significantly maintained during the follow-up assessment, $d = 0.16, p < 0.05$.

Comparing to Traditional PCIT We also compared the current study’s effect sizes to those found in traditional PCIT,

Table 2 Summary of results

| | Pre-treatment ^a | Post-treatment ^b | 6-month Follow-up ^c | <i>F</i> score | <i>Cohen's d</i> |
|--|----------------------------|-----------------------------|--------------------------------|----------------|--|
| Parenting Stress (P) | 83.96 (1.94) | 66.89 (1.58) | 69.81 (2.49) | 96.04*** | -0.78*** ^{ab} , -0.59*** ^{ac} , 0.11 ^{bc} |
| Positive Parenting/Parental Involvement (P) | 63.57 (1.24) | 66.92 (1.26) | 70.82 (0.76) | 12.64*** | 0.22*** ^{ab} , 0.57*** ^{ac} , 0.33 ^{bc} |
| Inconsistent Discipline (P) | 12.26 (0.47) | 10.04 (0.39) | 10.73 (0.50) | 10.89*** | -0.42*** ^{ab} , -0.25*** ^{ac} , 0.12 ^{bc} |
| Parent-Child Interaction: "Do skills" (O) | 3.93 (0.60) | 18.99 (1.07) | 13.67 (1.68) | 32.24*** | 1.40*** ^{ab} , 0.62*** ^{ac} , -0.31*** ^{bc} |
| Parent-Child Interaction: "Don't skills" (O) | 41.04 (1.67) | 17.51 (1.04) | 20.02 (1.51) | 27.21*** | -1.37*** ^{ab} , -1.07*** ^{ac} , 0.19 ^{bc} |
| Child Compliance-clean up task (O) | 0.59 (0.03) | 0.70 (0.02) | 0.66 (0.04) | 4.50* | 0.35*** ^{ab} , 0.16*** ^{ac} , -0.10 ^{bc} |

Values enclosed in parentheses represent standard errors. All analyses co-varied for socioeconomic level and child sex. *Cohen's d* effect sizes are reported for contrast tests between assessment time points (e.g., ^{ab} = comparison of pre and post assessments). ****p* < 0.001, ***p* < 0.01, **p* < 0.05. O, Observational measure, P, Parent report measure

both single group and independent group comparisons, as reported by a meta-analysis (Thomas and Zimmer-Gembeck 2007). The effect sizes (pre- to post-) found for parenting outcomes (observed *do* and *don't skills*) in the current study ($d = 1.37$ – 1.40) were comparable to those reported in traditional PCIT ($d = 1.15$ – 1.46). Similarly, when examining the maintenance of such parenting skills during the follow-up period, our effect sizes (observed *do* and *don't skills*) in the current study ($d = 0.62$ – 1.07) were slightly larger than those reported in traditional PCIT ($d = 0.61$ – 0.94).

Discussion

Within the context of a multimodal intervention, the STP-PreK, this study supports the initial feasibility and acceptability of our SRPP's PCIT adaptation (large group, 8-session, lack of requirement of "mastery" criteria) for preschoolers with EBP who are transitioning to kindergarten. The SRPP was: (1) implemented by clinicians with high fidelity, and (2) was very well received by families as evidenced by high levels

of treatment attendance and satisfaction. Results of the current study also demonstrate the initial efficacy of the STP-PreK in improving parenting outcomes for parents of preschoolers with EBP. The STP-PreK was associated with medium to large improvements across multiple domains of parenting (parenting stress, parent-child interactions, parental discipline strategies/involvement) as well as children's compliance that were largely maintained 6 to 9 months after the intervention ended. Finally, our SRPP's PCIT adaption approach yielded comparable parenting skills acquisition compared to traditional individual PCIT as evident by a comparison of our post and follow-up effect sizes to those reported by a meta-analysis (Thomas and Zimmer-Gembeck 2007).

Perhaps the strongest set of findings of the current study relates to the STP-PreK's effectiveness in targeting parent-child interactions. PCIT is one of the most well established evidenced-based PT programs for young children with EBP (Thomas and Zimmer-Gembeck 2007). However, one substantial limitation of PCIT is that parents are required to reach "mastery" of skills prior to treatment completion (e.g., 10 labeled praises, 10 reflections, 10 behavioral descriptions),

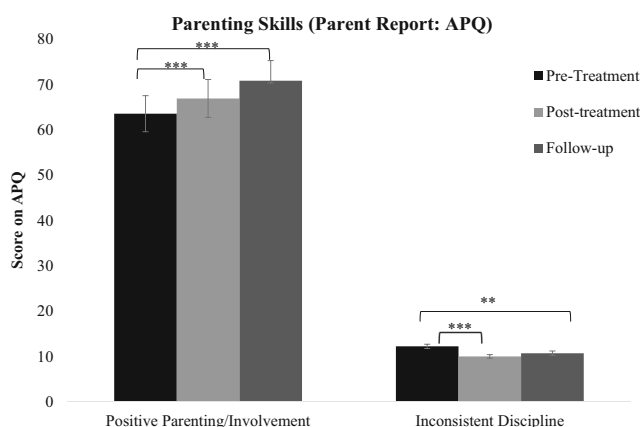


Fig. 1 Parent reported positive and negative parenting skills at pre-treatment, post-treatment, and follow-up. Analyses controlled for child age and sex. APQ = Alabama Parenting Questionnaire. ****p* < 0.001, ***p* < 0.01

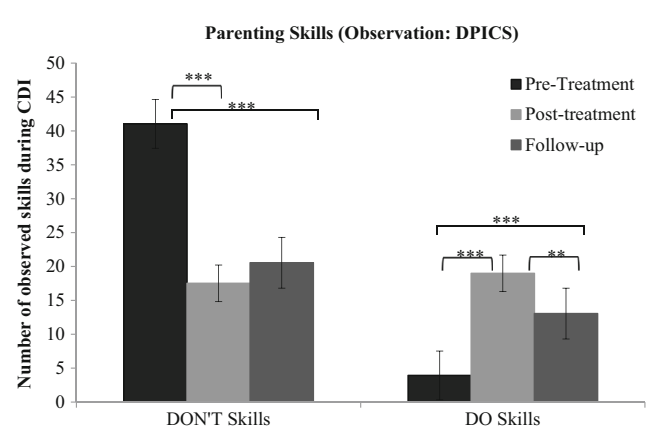


Fig. 2 Observed parent use of DO and DON'T skills at pre-treatment, post-treatment, and follow-up. Analyses controlled for child age and sex. DPICS = Dyadic Parent-Child Interaction Coding System, CDI = Child Directed Interaction. ****p* < 0.001, ***p* < 0.01

which can often lead treatment to be over four months (Reyno and McGrath 2006) as well as contribute to substantial drop-out rates (Werba et al. 2006). Only 14% of families in our study met such traditional, yet arbitrary, master criteria but nevertheless experienced similar, if not longer lasting improvements across parenting domains and child compliance compared to individual PCIT studies (Thomas and Zimmer-Gembeck 2007). Thus, it will be important for future studies to empirically determine the optimal number of skills that parents must demonstrate prior to treatment completion that leads them to better maintenance of their skills. In terms of clinical implications, therapists may want to progress families to the next phase of PCIT based on families' magnitude of improvement versus waiting for them to cross an arbitrary threshold that does not assure better maintenance of skills.

Additionally, to overcome some of the costs of providing individual PCIT, some studies have been able to demonstrate that PCIT can be delivered in small groups of 4 to 5 families, although treatment completion times continue to be about 3 months (Nieter et al. 2013). The current study provides evidence for the feasibility of implementing large group PCIT (15–20 parents) as our observed parenting skills effect sizes were comparable if not slightly larger than traditional PCIT (Thomas and Zimmer-Gembeck 2007). The fact that such large effect sizes were accomplished in not only 8 sessions, but with only two “coaching” sessions of 10 min (one for the child directed phase and one for the parent directed phase), speaks to the effectiveness of the hybrid system that we developed. While a comprehensive cost-effectiveness analysis was beyond the current study, our large group PCIT is estimated to cost about \$350 per family taking into account therapists, child care, meals for families, and supplies. This represents one third of the cost of a traditional PCIT treatment cost (Goldfine et al. 2008).

Specifically, our hybrid delivery system merges didactic information delivered within the large group as done in other PT programs such as COPE (Cunningham 1998), and then utilizes subgroups to have multiple parents concurrently practice their skills with their own children. There may be a couple of benefits to this approach. For one, it may be that by having the parents who are observing complete a coding sheet similar to one a PCIT therapist would complete, allows the observing parents to be more actively engaged in the session and further consolidate their learning of their skills. Future work should examine the extent to which the observed parents are accurately coding the target parent and providing accurate feedback. Such work would allow us to discern whether it is simply having peer support during the practice sessions that motivates parents to continue to engage in these newly acquired skills or if the accuracy of such feedback actually matters.

Additionally, peer modeling may enhance parenting self-efficacy among observing parents. There is an extensive literature on the importance of parenting self-efficacy, in terms of parents' perception of their ability to manage their children's behavior, as it relates to engaging in more positive practices and warm/sensitive parent-child interactions (Coleman and Karraker 2000; Sanders and Woolley 2005). Social support on its own can positively influence parenting self-efficacy and subsequently engagement in more positive parenting (Izzo et al. 2000). Our group PCIT format may indeed be capturing not only social support, as in other group PT modalities, but may also highlight how seeing other parents in “action” provides a further increase in parenting self-efficacy. Future work examining our large group PCIT format may want to measure parenting self-efficacy more thoroughly and compare it to other group based PT programs without a peer modeling component.

Of note and consistent with prior PT studies (Reyno and McGrath 2006; Leijten et al. 2013), parents from lower SES backgrounds displayed fewer “do skills” and more “don't skills” at post-treatment. Thus, while PT attendance was not related to SES, it appears that families from lower SES backgrounds had more difficulty mastering the skills taught in the large group format. Future work is needed to determine whether this association is due to families not fully understanding the content during the sessions, not receiving sufficient coaching by the therapists in session, and/or not practicing the skills at home. Indeed, understanding mechanisms underlying parent engagement and why PT works better for some families versus others is an emerging area of research with some recent studies showing the important of families completing homework practice in between sessions (Clarke et al. 2015; Stokes et al. 2016; Ros et al. 2016).

While behavioral parent training (PT) programs are well-established in their efficacy towards improving various parenting dimensions and subsequently children's behavioral functioning (Eyberg et al. 2008; Pelham and Fabiano 2008), attrition tends to be a significant problem with as many as one-third to 60 % of families terminating treatment early (Eyberg et al. 2001; Werba et al. 2006; Kazdin and Wassell 1998). Families of the SRPP attended 86% of PT sessions with only 4 families dropping out of treatment. Such a low attrition rate is significantly better compared to other PT studies (Chronis et al. 2004) with the attendance also being better compared to other group based PT that target preschoolers (67% see Chacko et al. 2016). Given that the SRPP took place within the context of the STP-PreK, it is important to note the role that concurrent behavioral treatment may have had on parent engagement. In fact, a recently completed small pilot randomized trial (Graziano and Hart 2016) indicated that 26% of families randomized to receive only the parenting component of the STP-PreK (i.e., SRPP-only condition, $n = 15$) failed to initiate treatment versus 0% families who were randomized to

all components of the multimodal intervention, $n = 30$). Upon the initiation of treatment, however, no differences were found for PT attendance or attrition among the groups. While larger samples are needed to examine the SRPP as a stand-alone intervention, it appears that participation in an intensive child-based treatment component (i.e., summer camp) maximizes initial parental engagement with the SRPP, and, relative to other PT studies, results in better PT attendance and reduced likelihood of attrition.

Consistent with other PT studies, the STP-PreK was effective in reducing parental stress, increasing positive parenting strategies and involvement, and reducing inconsistent discipline practices that maintained at the follow-up period. The small to moderate effect sizes within the parenting practices measure (APQ) is consistent with prior PT studies (Fabiano et al. 2009; Feinfield and Baker 2004; Lee et al. 2012). As pointed out by Darling and Steinberg (1993), parenting style and parenting practices are related yet distinct constructs that are influenced by parents' goals and child rearing values. When viewed in conjunction with the improvements of "do" and "don't": skills, it appears that the STP-PreK is successful in encouraging an authoritative parenting style in terms of promoting higher levels of warmth and responsiveness during parent-child interactions but also encouraging control via consistent and positive discipline practices (Baumrind 1978). Given children's concurrent participation in the kindergarten readiness classroom of the STP-PreK, it is not possible to disentangle the source of children's behavioral improvement (camp versus PT program or combination) which likely affected improvements across parenting domains. For example, significant work has established the bidirectional nature of children's EBP and parenting practices (Pardini et al. 2008; Pettit and Arsiwalla 2008) often conceptualized as a "coercive cycle" of negative interactions (Patterson 1982). Parenting stress and children's EBP are also bidirectionally associated (Neece et al. 2012; Williford et al. 2007; Woodman et al. 2015). Despite participation in the kindergarten readiness class, parents who complete PT may be more aware of the importance of engaging in more positive strategies and be more consistent with their discipline practices. While several studies have documented parenting practices as a mediator of child outcomes after behavioral treatments (Beauchaine et al. 2005; Hinshaw et al. 2000), more work is needed to determine which aspects of such parenting practices (positive versus negative) are most influential in explaining the mechanism by which PT is effective in improving child behavior.

There were some limitations to the current study that need to be addressed. First, due to the open trial nature of this study, there was no control group. Hence, it is possible that children's maturation may naturally lead to decreases in parental stress and subsequently evoke less negative parenting practices. However, this possibility is unlikely given that longitudinal work has demonstrated that parenting practices are highly

stable across the first 6 years of life (Dallaire and Weinraub 2005). Second, 90% of families were enrolled in the classroom component of the STP-PreK (Graziano et al. 2014). Given that most parenting measures were self-report (other than the "do" and "don't" skills), it is important to acknowledge the potential role of rater bias in these ratings given that the parents invested significant time in bringing their children to camp and coming to the parenting group. While a recently completed randomized trial (Graziano and Hart 2016) indicated no differences in behavioral functioning improvements among children who only participated in the SRPP versus those who also participated in the classroom component of the STP-PreK, it is possible that improvements in children's behavior at camp may have increased parents' motivation and engagement in PT sessions. It is important to note that the current study focused on the behavioral management aspect of our SRPP (i.e., our PCIT adaptation of large group, 8-session, lack of requirement of "mastery" criteria approach), and could not properly evaluate the school readiness topics covered during the second half of each SRPP session.

A final limitation was that our parenting measures and observations were completed almost exclusively with mothers (96%). There is a growing literature on the importance of father involvement in treatment of young children with EBP (Bagner 2013). One of the benefits of the SRPP was the ability to include multiple caregivers as part of the larger group. Future work should examine the extent to which multiple caregiver involvement in the STP-PreK leads to greater parenting improvements as well as having fathers complete parenting measures.

In sum, within the context of a multimodal intervention (i.e., the STP-PreK), our findings highlight the promise of our SRPP's PCIT adaptation (large group, 8-session, lack of "mastery" criteria) targeting young children with EBP. It is also important to note that despite our more liberal inclusion criteria (at-risk levels or higher on the BASC-2), 88% of our sample had a diagnosis of ADHD and/or ODD suggesting that our program is effective with a clinical population. Medium to large effect sizes across mother report and observations showed that our SRPP's PCIT adaptation was a) very effective in targeting multiple aspects of parenting and b) yielded comparable parenting skills acquisition compared to traditional individual PCIT. A preliminary cost analysis also indicated that our PCIT adaptation (given its large group format) is one third the cost of traditional PCIT which could substantially cut costs to families from lower economic backgrounds and help disseminate PCIT to community settings. Future work needs to examine the extent to which the SRPP, and specifically our PCIT adaptation, can have similar benefits outside the context of a multimodal intervention such as the STP-PreK.

Acknowledgements The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through

Grant R324A120136 as well as a local grant from The Children's Trust (1329-7290) to the first author. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education or The Children's Trust. We would also like to acknowledge the support of Miami-Dade County Public Schools and thank the families and dedicated staff who participated in the study.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

- Abidin, R. R. (1995). *Parenting stress index*. Odessa: Psychological Assessment Resources.
- Bagner, D. M. (2013). Father's role in parent training for children with developmental delay. *Journal of Family Psychology, 27*(4), 650.
- Bagner, D. M., Rodríguez, G. M., Blake, C. A., & Rosa-Olivares, J. (2013). Home-based preventive parenting intervention for at-risk infants and their families: An open trial. *Cognitive and Behavioral Practice, 20*(3), 334–348.
- Baumrind, D. (1978). Parental disciplinary patterns and social competence in children. *Youth & Society, 9*(3), 239–267.
- Beauchaine, T. P., Webster-Stratton, C., & Reid, M. J. (2005). Mediators, moderators, and predictors of 1-year outcomes among children treated for early-onset conduct problems: A latent growth curve analysis. *Journal of Consulting and Clinical Psychology, 73*(3), 371.
- Belsky, J., Woodworth, S., & Crnic, K. (1996). Trouble in the second year: Three questions about family interaction. *Child Development, 67*, 556–578.
- Breen, M. J., & Barkley, R. A. (1988). Child psychopathology and parenting stress in girls and boys having attention deficit disorder with hyperactivity. *Journal of Pediatric Psychology, 13*(2), 265–280.
- Brestan, E., Jacobs, J., Rayfield, A., & Eyberg, S. M. (1999). A consumer satisfaction measure for parent-child treatments and its relationship to measures of child behavior change. *Behavior Therapy, 30*, 17–30.
- Chacko, A., Jensen, S. A., Lowry, L. S., Cornwell, M., Chimklis, A., Chan, E., & Pulgarin, B. (2016). Engagement in behavioral parent training: Review of the literature and implications for practice. *Clinical child and family psychology review, 19*(3), 204–215.
- Chronis, A. M., Chacko, A., Fabiano, G. A., Wymbs, B. T., & Pelham Jr., W. E. (2004). Enhancements to the behavioral parent training paradigm for families of children with ADHD: Review and future directions. *Clinical Child and Family Psychology Review, 7*, 1–27.
- Clarke, A. T., Marshall, S. A., Mautone, J. A., Soffer, S. L., Jones, H. A., Costigan, T. E., et al. (2015). Parent attendance and homework adherence predict response to a family-school intervention for children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 44*(1), 58–67.
- Clerkin, S. M., Halperin, J. M., Marks, D. J., & Policaro, K. L. (2007). Psychometric properties of the Alabama parenting questionnaire—preschool revision. *Journal of Clinical Child and Adolescent Psychology, 36*(1), 19–28.
- Coleman, P. K., & Karraker, K. H. (2000). Parenting self-efficacy among mothers of school-age children: Conceptualization, measurement, and correlates. *Family Relations, 49*(1), 13–24.
- Committee on Early Childhood Pedagogy (2000). Executive summary. In B. Bowman, M. S. Donovan, M. S. Burns (Eds.), *Eager to learn: educating our preschoolers* (pp. 1–22). Washington, DC: National Academy Press.
- Crnic, K., & Low, C. (2002). Everyday stresses and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting* (pp. 243–267). Mahwah: Erlbaum.
- Cunningham, C. E. (1998). A large-group, community-based, family systems approach to parent training. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (2nd ed., pp. 394–412). New York: Guilford.
- Cunningham, C. E., Bremner, R., & Boyle, M. (1995). Large group community-based parenting programs for families of preschoolers at risk for disruptive behaviour disorders: Utilization, cost effectiveness, and outcome. *Journal of Child Psychology and Psychiatry, 36*(7), 1141–1159.
- Dadds, M., Maujean, A., & Fraser, J. (2003). Parenting and conduct problems in children: Australian data and psychometric properties of the Alabama parenting questionnaire. *Australian Psychologist, 38*(3), 238–241.
- Dallaire, D. H., & Weinraub, M. (2005). The stability of parenting behaviors over the first 6 years of life. *Early Childhood Research Quarterly, 20*(2), 201–219.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*(3), 487.
- Deater-Deckard, K., & Scarr, S. (1996). Parenting stress among dual-earner mothers and fathers: Are there gender differences? *Journal of Family Psychology, 10*(1), 45.
- Deault, L. C. (2010). A systematic review of parenting in relation to the development of comorbidities and functional impairments in children with attention-deficit/hyperactivity disorder (ADHD). *Child Psychiatry and Human Development, 41*(2), 168–192.
- Denham, S. A. (2006). Social-emotional competence as support for school readiness: What is it and how do we assess it? *Early education and development, 17*(1), 57–89.
- Domitrovich, C., Durlak, J., Goren, P., & Weissberg, R. (2013). *Effective social and emotional learning programs: Preschool and elementary school edition*. Chicago: CASEL guide.
- Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., et al. (2007). School readiness and later achievement. *Developmental Psychology, 43*(6), 1428.
- Epstein, J. L. (1987). Toward a theory of family-school connections. *Hurrelmann, K, Kaufmann, Losel, F. eds., Social intervention: Potential and Constraints, New York: DeGruyter*, 121–136.
- Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Westview Press, 5500 Central Avenue, Boulder, CO 80301.
- Essau, C. A., Sasagawa, S., & Frick, P. J. (2006). Psychometric properties of the Alabama parenting questionnaire. *Journal of Child and Family Studies, 15*(5), 595–614.
- Eyberg, S. M., Funderburk, B. W., Hembree-Kigin, T. L., McNeil, C. B., Querido, J. G., & Hood, K. K. (2001). Parent-child interaction therapy with behavior problem children: One and two year maintenance of treatment effects in the family. *Child and Family Behavior Therapy, 23*(4), 1–20.
- Eyberg, S. M., Nelson, M. M., Duke, M., & Boggs, S. R. (2005). Manual for the dyadic parent-child interaction coding system (3rd edition). Available online at www.pcit.org.
- Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive

- behavior. *Journal of Clinical Child & Adolescent Psychology*, 37, 215–237.
- Pelham, Jr, W. E., Fabiano, G. A., & Massetti, G. M. (2005). Evidence-based assessment of attention deficit hyperactivity disorder in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 34(3), 449–476.
- Fabiano, G. A., Pelham Jr., W. E., Waschbusch, D. A., Gnagy, E. M., Lahey, B. B., Chronis, A. M., et al. (2006). A practical measure of impairment: Psychometric properties of the impairment rating scale in samples of children with attention deficit hyperactivity disorder and two school-based samples. *Journal of Clinical Child and Adolescent Psychology*, 35(3), 369–385.
- Fabiano, G. A., Pelham, W. E., Coles, E. K., Gnagy, E. M., Chronis-Tuscano, A., & O'Connor, B. C. (2009). A meta-analysis of behavioral treatments for attention-deficit/hyperactivity disorder. *Clinical Psychology Review*, 29(2), 129–140.
- Feinfield, K. A., & Baker, B. L. (2004). Empirical support for a treatment program for families of young children with externalizing problems. *Journal of Clinical Child and Adolescent Psychology*, 33(1), 182–195.
- Frick, P. J., Christian, R. E., & Wootton, J. M. (1999). Age trends in association between parenting practices and conduct problems. *Behavior Modification*, 23(1), 106–128.
- Gerdes, A. C., Hoza, B., & Pelham, W. E. (2003). Attention-deficit/hyperactivity disorder boys' relationships with their mothers and fathers: Child, mother, and father perceptions. *Development and Psychopathology*, 15(02), 363–382.
- Goldfine, M. E., Wagner, S. M., Branstetter, S. A., & Mcneil, C. B. (2008). Parent-child interaction therapy: An examination of cost-effectiveness. *Journal of Early and Intensive Behavior Intervention*, 5(1), 119.
- Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and the Family*, 61, 574–587.
- Graziano, P. A., & Hart, K. (2016). Beyond behavior modification: Benefits of social-Emotional/self-regulation training for preschoolers with behavior problems. *Journal of School Psychology*, 58, 91–111.
- Graziano, P. A., Slavec, J., Hart, K., Garcia, A., & Pelham Jr., W. E. (2014). Improving school readiness in preschoolers with behavior problems: Results from a summer treatment program. *Journal of Psychopathology and Behavioral Assessment*, 36(4), 555–569.
- Graziano, P. A., Bagner, D. M., Slavec, J., Hungerford, G., Kent, K., Babinski, D., et al. (2015). Feasibility of intensive parent-child interaction therapy (I-PCIT): Results from an open trial. *Journal of Psychopathology and Behavioral Assessment*, 37(1), 38–49.
- Gregory, A., & Rimm-Kaufman, S. (2008). Positive mother-child interactions in kindergarten: Predictors of school success in high school. *School Psychology Review*, 37(4), 499.
- Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, 65(1), 237–252.
- Hill, N. E., & Craft, S. A. (2003). Parent-school involvement and school performance: Mediated pathways among socioeconomically comparable African American and euro-American families. *Journal of Educational Psychology*, 95(1), 74.
- Hinshaw, S. P., Owens, E. B., Wells, K. C., Kraemer, H. C., Abikoff, H. B., Arnold, L. E., et al. (2000). Family processes and treatment outcome in the MTA: Negative/ineffective parenting practices in relation to multimodal treatment. *Journal of Abnormal Child Psychology*, 28(6), 555–568.
- Hoover-Dempsey, K. V., Walker, J. M., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal*, 106(2), 105–130.
- Izzo, C., Weiss, L., Shanahan, T., & Rodriguez-Brown, F. (2000). Parental self-efficacy and social support as predictors of parenting practices and children's socioemotional adjustment in Mexican immigrant families. *Journal of Prevention & Intervention in the Community*, 20(1–2), 197–213.
- Johnson, J. H., & Reader, S. K. (2002). Assessing stress in families of children with ADHD: Preliminary development of the disruptive behavior stress inventory (DBSI). *Journal of Clinical Psychology in Medical Settings*, 9(1), 51–62.
- Johnston, C. (1996). Parent characteristics and parent-child interactions in families of nonproblem children and ADHD children with higher and lower levels of oppositional-defiant behavior. *Journal of Abnormal Child Psychology*, 24(1), 85–104.
- Johnston, C., & Mash, E. J. (2001). Families of children with attention-deficit/hyperactivity disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review*, 4(3), 183–207.
- Jones, T. L., & Prinz, R. J. (2005). Potential roles of parental self-efficacy in parent and child adjustment: A review. *Clinical Psychology Review*, 25(3), 341–363.
- Kazdin, A. E., & Wassell, G. (1998). Treatment completion and therapeutic change among children referred for outpatient therapy. *Professional Psychology: Research and Practice*, 29(4), 332.
- Kordi, A., & Baharudin, R. (2010). Parenting attitude and style and its effect on children's school achievements. *International Journal of Psychological Studies*, 2(2), 217.
- Lanier, P., Kohl, P. L., Benz, J., Swinger, D., Moussette, P., & Drake, B. (2011). Parent-child interaction therapy in a community setting: Examining outcomes, attrition, and treatment setting. *Research on Social Work Practice*, 21(6), 689–698.
- Lee, P. C., Niew, W. I., Yang, H. J., Chen, V. C. H., & Lin, K. C. (2012). A meta-analysis of behavioral parent training for children with attention deficit hyperactivity disorder. *Research in Developmental Disabilities*, 33(6), 2040–2049.
- Leijten, P., Raaijmakers, M. A., de Castro, B. O., & Matthys, W. (2013). Does socioeconomic status matter? A meta-analysis on parent training effectiveness for disruptive child behavior. *Journal of Clinical Child & Adolescent Psychology*, 42(3), 384–392.
- Mash, E. J., & Johnston, C. (1983). Parental perceptions of child behavior problems, parenting self-esteem, and mothers' reported stress in younger and older hyperactive and normal children. *Journal of Consulting and Clinical Psychology*, 51(1), 86.
- Matos, M., Torres, R., Santiago, R., Jurado, M., & Rodriguez, I. (2006). Adaptation of parent-Child interaction therapy for Puerto Rican families: A preliminary study. *Family Process*, 45(2), 205–222.
- McClelland, M. M., Cameron, C. E., Connor, C. M., Farris, C. L., Jewkes, A. M., & Morrison, F. J. (2007). Links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills. *Developmental Psychology*, 43, 947–959.
- McMahon, R. J., & Forehand, R. L. (2003). *Helping the noncompliant child*. New York: Guilford.
- McWayne, C., Fantuzzo, J., Cohen, H. L., & Sekino, Y. (2004). A multivariate examination of parent involvement and the social and academic competencies of urban kindergarten children. *Psychology in the Schools*, 41(3), 363–377.
- Morrison, E. F., Rimm-Kauffman, S., & Pianta, R. C. (2003). A longitudinal study of mother-Child interactions at school entry and social and academic outcomes in middle school. *Journal of School Psychology*, 41(3), 185–200.
- Neece, C. L., Green, S. A., & Baker, B. L. (2012). Parenting stress and child behavior problems: A transactional relationship across time. *American Journal on Intellectual and Developmental Disabilities*, 117(1), 48–66.
- NICHD Early Child Care Research Network (2002). Early child care and children's development prior to school entry: Results from the

- NICHD Study of Early Child Care. *American Educational Research Journal*, 39(1), 133–164.
- Niec, L. N., Hemme, J. M., Yopp, J. M., & Brestan, E. V. (2006). Parent-child interaction therapy: The rewards and challenges of a group format. *Cognitive and Behavioral Practice*, 12(1), 113–125.
- Nieter, L., Thornberry Jr., T., & Brestan-Knight, E. (2013). The effectiveness of group parent–Child interaction therapy with community families. *Journal of Child and Family Studies*, 22(4), 490–501.
- Nigg, J., & Barkley, R. (2014). Attention-deficit/hyperactivity disorder. In E. Mash & R. Barkley (Eds.), *Child psychopathology* (3rd ed., pp. 75–144). New York: Guilford Press.
- Pardini, D. A., Fite, P. J., & Burke, J. D. (2008). Bidirectional associations between parenting practices and conduct problems in boys from childhood to adolescence: The moderating effect of age and African-American ethnicity. *Journal of Abnormal Child Psychology*, 36(5), 647–662.
- Patterson, G. R. (1982). *Coercive family process*. Eugene, Oregon: Castalia Press.
- Pelham Jr., W. E., & Fabiano, G. A. (2008). Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder. *Journal of Clinical Child & Adolescent Psychology*, 37, 184–214.
- Pelham, W. E., Gnagy, E. M., Greenslade, K. E., & Milich, R. (1992). Teacher ratings of DSM-III-R symptoms for the disruptive behavior disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 31(2), 210–218.
- Pettit, G. S., & Arsiwalla, D. D. (2008). Commentary on special section on “bidirectional parent–Child relationships”: The continuing evolution of dynamic, transactional models of parenting and youth behavior problems. *Journal of Abnormal Child Psychology*, 36(5), 711–718.
- Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems—a meta-analytic review. *Journal of Child Psychology and Psychiatry*, 47(1), 99–111.
- Reynolds, C. R., & Kamphaus, R. W. (2004). *Behavior assessment system for children – Second edition (BASC-2)*. Bloomington: Pearson.
- Rogers, M. A., Wiener, J., Marton, I., & Tannock, R. (2009). Parental involvement in children's learning: Comparing parents of children with and without attention-deficit/hyperactivity disorder (ADHD). *Journal of School Psychology*, 47(3), 167–185.
- Ros, R., Hernandez, J., Graziano, P. A., & Bagner, D. M. (2016). Parent training for children with or at risk for developmental delay: The role of parental homework completion. *Behavior Therapy*, 47(1), 1–13.
- Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. Hillsdale, NJ: John Wiley & Sons.
- Sanders, M. R., & Woolley, M. L. (2005). The relationship between maternal self-efficacy and parenting practices: Implications for parent training. *Child: Care, Health and Development*, 31(1), 65–73.
- Sanders, M. R., Markie-Dadds, C., Tully, L. A., & Bor, W. (2000). The triple P-positive parenting program: A comparison of enhanced, standard, and self-directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology*, 68(4), 624.
- Schuhmann, E. M., Foote, R. C., Eyberg, S. M., Boggs, S. R., & Algina, J. (1998). Efficacy of parent-child interaction therapy: Interim report of a randomized trial with short-term maintenance. *Journal of Clinical Child Psychology*, 27(1), 34–45.
- Shaffer, D., Fisher, P., Lucas, C. P., Dulcan, M. K., & Schwab-Stone, M. E. (2000). NIMH diagnostic interview schedule for children version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child & Adolescent Psychiatry*, 39, 28–38.
- Shelton, K. K., Frick, P. J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*, 25(3), 317–329.
- Stokes, J. O., Jent, J. F., Weinstein, A., Davis, E. M., Brown, T. M., Cruz, L., & Wavering, H. (2016). Does practice make perfect? The relationship between self-reported treatment homework completion and parental skill acquisition and child behaviors. *Behavior Therapy*, 47(4), 538–549.
- Thomas, R., & Zimmer-Gembeck, M. J. (2007). Behavioral outcomes of parent-child interaction therapy and triple P—Positive parenting program: A review and meta-analysis. *Journal of Abnormal Child Psychology*, 35(3), 475–495.
- Thomas, R., & Zimmer-Gembeck, M. J. (2011). Accumulating evidence for parent–child interaction therapy in the prevention of child maltreatment. *Child Development*, 82(1), 177–192.
- Wagner, M., Kutash, K., Duchnowski, A. J., & Epstein, M. H. (2005). The special education elementary longitudinal study and the National Longitudinal Transition Study Study Designs and implications for children and youth with emotional disturbance. *Journal of Emotional and Behavioral Disorders*, 13(1), 25–41.
- Weaver, C. M., Shaw, D. S., Dishion, T. J., & Wilson, M. N. (2008). Parenting self-efficacy and problem behavior in children at high risk for early conduct problems: The mediating role of maternal depression. *Infant Behavior & Development*, 31(4), 594–605.
- Webb, H. J., Thomas, R., McGregor, L., Avdagic, E., & Zimmer-Gembeck, M. J. (2017). An evaluation of parent–child interaction therapy with and without motivational enhancement to reduce attrition. *Journal of Clinical Child & Adolescent Psychology*, 46(4), 537–550.
- Webster-Stratton, C., & Reid, M. J. (2010). The incredible years parents, teachers and child training series: A multifaceted treatment approach for young children with conduct problems. In J. R. Weisz & A. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents* (2nd ed., pp. 194–210). New York: Guilford Press.
- Webster-Stratton, C. M., Reid, M. J., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: evaluation of the incredible years teacher and child training programs in high-risk schools. *Journal of Child Psychology and Psychiatry*, 49, 471–488.
- Wechsler, D. (2002). *WPPSI-III administration and scoring manual*. San Antonio: Psychological Corp.
- Wechsler, D. (2012). *Wechsler preschool and primary scale of intelligence* (4th ed.). San Antonio: NCS Pearson.
- Werba, B. E., Eyberg, S. M., Boggs, S. R., & Algina, J. (2006). Predicting outcome in parent-child interaction therapy success and attrition. *Behavior Modification*, 30, 618–646.
- Williford, A. P., Calkins, S. D., & Keane, S. P. (2007). Predicting change in parenting stress across early childhood: Child and maternal factors. *Journal of Abnormal Child Psychology*, 35(2), 251–263.
- Woodman, A. C., Mawdsley, H. P., & Hauser-Cram, P. (2015). Parenting stress and child behavior problems within families of children with developmental disabilities: Transactional relations across 15 years. *Research in Developmental Disabilities*, 36, 264–276.
- Zisser, A., & Eyberg, S. M. (2010). Parent-child interaction therapy and the treatment of disruptive behavior disorders. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 179–193). New York: Guilford Press.